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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,428	12/17/2001	Robert W. Milgate JR.	81668	2356

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EXAMINER

CHANEY, CAROL DIANE

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

10/023,428

Applicant(s)

MILGATE ET AL.

Examiner

Carol Chaney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-17, 19 and 22-24 is/are rejected.
- 7) ☒ Claim(s) 9, 18, 20 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The terms "loose fit" and "acceptable level" in claims 4 and 13 are relative terms which renders the claims indefinite. The terms "loose" and "acceptable" are not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical

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Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 2, 4, 5, 7, 8, 10, 11, 13, 14, 16, 17, 22, 23, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Richards, US Patent 5,547,777.

Applicants' claims are directed to electrochemical stacks which include a plurality of PEM fuel cells and a reinforcing member peripherally surrounding the fuel cells and providing peripheral support to the stack. Richards discloses PEM fuel cells (10) surrounded by an integral housing (20) on which endplates (22) are mounted. (Figures 8 and 11, and column 17, lines 24-32.) The housing and endplates form a "reinforcing member." The end plates (22) are aluminum, and thus the reinforcing member is made of metal. Vents (25) are provided in the endplates of the reinforcing member. Individual fuel cells (10) are shown in detail in Fig. 9, and include a gasket or frame (12), bipolar plates or separators (13), and porous electrodes (14a, 14b) The porosity of the electrodes provide electrically-conductive means for forming fluid cavities between electrodes and the separators. As shown by Figures 8 and 10, the frames and reinforcing member are cylindrical. An annular space (27) provides electrically insulating material between the reinforcing member and the cell frames. (Column 18, lines 34-36.)

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With regards to claim 22, a compression pad (21) is provided in the structure described by Richards.

Claims 1, 2, 4, 5, 10, 11, 14, 23, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Mease et al., US Patent 6,218,039.

Mease et al. disclose a PEM fuel cell stack and a frame (104) designed to hold the fuel cell stack assembly. The fuel cells include a gasket (302) around their peripheries. (Column 3, lines 13-43, Figs. 2-4.) Note that the "frame" disclosed by Mease et al. is considered the "reinforcing member" disclosed by the applicants, and the "gasket" disclosed by Mease et al. is considered the "frame" disclosed by the applicants. The Mease et al. assembly is cylindrical since it has a uniform cross-section along an axis at right angles to the base, and may be made from metal. (See column 3, lines 63-66 and Figs. 2 and 3.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 6, 12, 15, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richards. As discussed above, Richards discloses applicants' invention essentially as claimed, with the exception that Richards does not disclose a

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reinforcing member formed of plastic and/or stainless steel. However, applicants invention as a whole would have been obvious to one of ordinary skill in the art, because the alumina ceramic housing and aluminum plate materials disclosed by Richards are not disclosed as critical materials, and therefore one of ordinary skill in the art would choose appropriate materials including plastics and stainless steels, based upon application requirements, material cost, material availability, etc.

Allowable Subject Matter

Claims 9, 18, 20, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to suggest using electrically conductive compression pads as claimed by the applicants, and does not suggest a plurality of vents on the periphery of the reinforcing member. Although the prior art of Richards suggest vents, there is no motivation to place the vents disclosed by Richards on the periphery of the reinforcing member. Richards discloses electrically compression pads in a fuel cell structure, but there appears to be no motivation to use the specific carbon fiber mat claimed by the applicants.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wozniczka et al. US Patent 5,789,091 discloses a fuel cell support/compression means

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol Chaney whose telephone number is (703) 305-3777. The examiner can normally be reached on Mon - Fri 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 703-308-2383. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Carol Chaney
Primary Examiner
Art Unit 1745

cc